In the Claims

Claims 1-36 (canceled)

37. (currently amended) A method of controlling the output power of an RF power amplifier comprising:

generating a power detection signal relating to the output power of an RF power amplifier;

amplifying the power detection signal using a variable gain amplifier;

generating a gain control signal for setting the gain of the variable gain amplifier, wherein the gain control signal is generated using the output of the variable gain amplifier; and

using the gain control signal to generate a power control signal for use by the RF power amplifier in setting the output power level of the RF power amplifier.

38. (canceled)

39. (currently amended) The method of claim 37 ~~claim 38~~, wherein the gain control signal is related to the envelope of the output of the variable gain amplifier.

40. (currently amended) The method of claim 37 ~~claim 38~~, wherein the gain control signal is generated by sensing the output of the variable gain amplifier.

41. (currently amended) The method of claim 37 ~~claim 38~~, wherein the gain control signal is generated by using a peak detector on the output of the variable gain amplifier.

42. (previously presented) The method of claim 40, wherein the gain control signal is generated using the sensed output of the variable gain amplifier and a reference signal.

43. (previously presented) The method of claim 37, wherein the variable gain amplifier is a multi-stage amplifier.

44. (previously presented) The method of claim 43, wherein the gain of each stage of the variable gain amplifier is set by the gain control signal.

45. (previously presented) An RF power amplifier comprising:

an amplifier;

a power detector coupled to the output of the amplifier for detecting the output power of the amplifier;

a variable gain amplifier having an input and an output, wherein the input is coupled to the power detector;

a first circuit coupled to the output of the variable gain amplifier for generating a gain control signal, wherein the gain control signal controls the gain of the variable gain amplifier; and

a second circuit coupled to the gain control signal for generating a power control signal based on the gain control signal.

46. (previously presented) The RF power amplifier of claim 45, wherein the power control signal is coupled to the RF power amplifier for controlling the output power of the RF power amplifier.

47. (previously presented) The RF power amplifier of claim 45, wherein the power detector is comprised of a directional coupler.

48. (previously presented) The RF power amplifier of claim 45, wherein the variable gain amplifier is a multi-stage amplifier.

49. (previously presented) The RF power amplifier of claim 48, wherein the gain of each stage of the multi-stage amplifier is controlled by the gain control signal.

50. (previously presented) The RF power amplifier of claim 45, wherein the first circuit includes a peak detector coupled to the output of the variable gain amplifier.

51. (previously presented) The RF power amplifier of claim 50, wherein the first circuit includes an op-amp coupled to an output of the peak detector and to a reference signal.

52. (previously presented) The RF power amplifier of claim 45, wherein the second circuit includes a conditioning circuit.

53. (currently amended) A method of controlling the output power of an RF power amplifier comprising:

detecting the output power of an RF power amplifier;

providing a variable gain amplifier ~~circuit~~ that approximates a logarithmic amplifier, wherein the gain of the variable gain amplifier is controlled by a gain control signal, and wherein the gain control signal is related to the output of the variable gain amplifier;

using the gain control signal ~~circuit~~ to generate a power control signal, wherein the power control signal has a generally linear relationship with the output power of the RF power amplifier on a log scale.

54. (canceled)

55. (currently amended) The method of claim 53 ~~claim 54~~, wherein the variable gain amplifier is a multi-stage amplifier.

56. (previously presented) The method of claim 55, wherein the gain of each stage of the variable gain amplifier is set by the gain control signal.

57. (currently amended) The method of claim 53 ~~claim 54~~, wherein the power control signal is related to the gain of the variable gain amplifier.

58. (canceled)

59. (currently amended) The method of claim 53 ~~claim 58~~, wherein the gain control signal is generated using the output of the variable gain amplifier.

60. (currently amended) The method of claim 53 ~~claim 58~~, wherein the gain control signal is related to the envelope of the output of the variable gain amplifier.

61. (currently amended) The method of claim 53 ~~claim 58~~, wherein the gain control signal is generated by sensing the output of the variable gain amplifier.

62. (previously presented) The method of claim 61, wherein the gain control signal is generated using the sensed output of the variable gain amplifier and a reference signal.

63. (currently amended) The method of claim 53 ~~claim 58~~, wherein the gain control signal is generated by using a peak detector on the output of the variable gain amplifier.

64. (currently amended) A method of controlling the output power of an RF power amplifier comprising:

generating a power detection signal relating to the output power of an RF power amplifier;

amplifying the power detection signal using a variable gain amplifier;

setting the gain of the variable gain amplifier using a gain control signal, wherein the gain control signal is generated using the output of the variable gain amplifier;

generating a power control signal for use by the RF power amplifier in setting the output power level of the RF power amplifier, wherein the power control signal is generated using the gain control signal ~~of the variable gain amplifier~~.

65. (canceled)

66. (currently amended) The method of claim 64 ~~claim 65~~, wherein the gain control signal is related to the envelope of the output of the variable gain amplifier.

67. (currently amended) The method of claim 64 ~~claim 65~~, wherein the gain control signal is generated by sensing the output of the variable gain amplifier.

68. (currently amended) The method of claim 64 ~~claim 65~~, wherein the gain control signal is generated by using a peak detector on the output of the variable gain amplifier.

69. (previously presented) The method of claim 67, wherein the gain control signal is generated using the sensed output of the variable gain amplifier and a reference signal.

70. (previously presented) The method of claim 64, wherein the variable gain amplifier is a multi-stage amplifier.

71. (previously presented) The method of claim 70, wherein the gain of each stage of the variable gain amplifier is set by the gain control signal.